

MAINTAINING THE STATISTICAL INTEGRITY OF THE ICD-9-CM

I. INCLUSION OF SECOND-HAND TOBACCO SMOKE WILL LOWER THE INTEGRITY OF STATISTICS

alleged Second-hand tobacco smoke is not an acute causation, and therefore inclusion onto the ICD-9-CM in the E-code section would result in a major change, since for the first time, a chronic causation is being added. The inclusion of chronic data onto the E-code will increase the misclassification errors, thus lowering the statistical integrity of the ICD-9-CM. Therefore, only by using a reliable and consistent methodology for determining causation, can meaningful statistical results be obtained.

II. THERE IS NO PROCESS FOR DETERMINING WHETHER A MEDICAL CONDITION WAS CAUSED BY SECOND-HAND TOBACCO SMOKE

Concern was expressed at the December 2, 1993 meeting of the ICD-9-CM Coordination and Maintenance Committee regarding how to determine whether a condition is due to second-hand tobacco smoke. The response given was that doctors will have total discretion to say if second-hand tobacco smoke caused a particular ailment. The lack of a guiding process in this matter is alarming for two reasons:

1. Inclusion of second-hand tobacco smoke onto the E-code will be precedential in nature since second-hand tobacco smoke is not an acute causation as are the other classifications listed in the E-code.
2. Improper classifications, due to the non-acute nature of second-hand tobacco smoke, will destroy the integrity of the statistical base generated by the ICD-9-CM.

Therefore, if second-hand tobacco smoke is included onto the ICD-9-CM, a process should be developed to help doctors determine whether a particular ailment was actually caused by second-hand tobacco smoke.

III. INCLUSION OF SECOND-HAND TOBACCO SMOKE ONTO THE E-CODE IS A PRECEDENT-SETTING DECISION

The inclusion of second-hand tobacco smoke onto the E-code is a precedent setting decision since it will change the types of classifications listed on the E-code from acute causations to chronic causations. Presently, the E-code lists acute causations such as:

- railway accidents,
- motor vehicle accidents,

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- poisonings, and
- accidents caused by fire.

clearly traceable
back to a single
event

Second-hand tobacco smoke has such an amorphous character that other factors must be considered such as the effects of confounders and the possibility of other contributors to the condition such as allergies, pollutants, and genetic predispositions to name just a few. Thus, by including second-hand tobacco smoke onto the E-code, the ICD-9-CM Coordination and Maintenance Committee will expand the E-code beyond acute causations to include chronic and long term causations as well.

Therefore, the precedential effect of including second-hand tobacco smoke onto the E-code should not be taken lightly because inclusion will have consequences beyond the realm of this particular case. The result of the inclusion of second-hand tobacco smoke onto the E-code will be a decrease in the integrity of the statistical base generated by the ICD-9-CM.

IV. INCLUSION OF SECOND-HAND TOBACCO SMOKE WILL RESULT IN INCREASED MISCLASSIFICATIONS

A major concern of a statistical data base is that misclassified data will be included which will lower the statistical integrity of the data base. There are two types of misclassification errors which have this effect, Type I and Type II.

- A Type-I error is the probability of incorrectly rejecting the null hypothesis (false positive).
- A Type-II error is the probability of failing to detect a real difference (false negative).

The expected proportions of misdiagnoses amongst the apparent positives and negatives depend not only on the probability of false positives and false negatives, but also on the true prevalence of the cause. Also, an increase in the false positives for second-hand tobacco smoke as a cause of a given condition results in an increase in the false negatives for other causes of diseases in the E-code. Thus, not only will the second-hand tobacco smoke section be incorrect, but other sections will as well since a listing of second-hand tobacco smoke as the cause will preclude the listing of the correct cause.

V. SOLUTION: ISSUANCE OF GUIDELINES

Due to the above reasons, a process needs to be developed which will retain the integrity of the statistical base.

This process should consist of two parts.

1. First, a policy decision must be made on whether to expand the E-code from acute causations to chronic causations.
2. If a policy decision is made to expand the E-code from its historical role of addressing acute causations to now include chronic causations, guidelines must be issued which would set forth criteria to be met before including chronic causes onto the E-code.
 - These criteria must address the issue of confounders since most, if not all chronic causes have potential confounders.
 - These guidelines should be issued for notice and comment in the Federal Register.

Although it is realized that this process will be difficult to establish and implement, the only other alternative would be to keep second-hand tobacco smoke off of the ICD-9-CM. Thus a decision needs to be made regarding whether the statistical integrity is better kept by inclusion of second-hand tobacco smoke along with a process for determining chronic causation, or not including second-hand tobacco smoke onto the code.

VI. RECOMMENDATION

Any decision to include second-hand tobacco smoke onto the E-code should be deferred until issuance of the guidelines outlined above.